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**IN THE CLAIMS**

1. (currently amended) A method used in equalization processing, comprising the steps of:

receiving a reference signal from a transmission line, wherein said reference signal is sent from a send side and said reference signal has predetermined phase and amplitude in the send side;

extracting, on the basis of a signal received from a transmission line that is a power line, reference information on from said reference signal using fluctuation of phase and amplitude of said reference signal, fluctuation of transmission line characteristics which fluctuate periodically according to an on-off state of a switching element in an apparatus that is connected to the power transmission line, wherein said signal is sent from a send side; and

performing equalization processing while switching equalization characteristics in accordance with said fluctuation of transmission line characteristics.

2. (previously presented) The method as claimed in claim 1, said step of extracting said reference information comprising the steps of:

detecting a change point of said transmission line characteristics by using fluctuation of phase or amplitude of said signal.

3. (original) The method as claimed in claim 2, said method further comprising the steps of:

extracting a basic frequency signal of fluctuation period of said transmission line characteristics;

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vectorizing said basic frequency signal into a vector;  
adjusting phases of change point vectors corresponding to two change points such that said phases become symmetrical with respect to a reference phase;  
comparing a component of said vector of said basic frequency signal with a reference value; and  
outputting a switching signal for switching said equalization characteristics according to a result of said step of comparing.

4. (original) The method as claimed in claim 3, said method further comprising the steps of:

performing equalization processing for each interval of said fluctuation of transmission line characteristics on each corresponding receive signal;

comparing errors of said each corresponding receive signal on which said equalization processing has been performed; and

updating said reference value on the basis of a result of said step of comparing errors.

5. (currently amended) An equalization processing apparatus comprising:

a part receiving a reference signal from a transmission line, wherein said reference signal is sent from a send side and said reference signal has predetermined phase and amplitude in the send side

a part extracting, on the basis of a signal received from a transmission line that is a power line, reference information on from said reference signal using fluctuation of phase and amplitude of said reference signal, fluctuation of transmission line characteristics which fluctuate

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periodically according to an on-off state of a switching element in an apparatus that is connected

to the ~~power transmission line, wherein said signal is sent from a send side; and~~

a part performing equalization processing while switching equalization characteristics in accordance with said fluctuation of transmission line characteristics.

6. (previously presented) The equalization processing apparatus as claimed in claim 5, said part extracting said reference information comprising:

a part detecting a change point of said transmission line characteristics by using fluctuation of phase or amplitude of said signal.

7. (original) The equalization processing apparatus as claimed in claim 6, further comprising:

a part extracting a basic frequency signal of fluctuation period of said transmission line characteristics;

a part vectorizing said basic frequency signal into a vector;

a part adjusting phases of change point vectors corresponding to two change points such that said phases become symmetrical with respect to a reference phase;

a part comparing a component of said vector of said basic frequency signal with a reference value; and

a part outputting a switching signal used for switching said equalization characteristics according to a result of comparing said component with said reference value.

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8. (original) The equalization processing apparatus as claimed in claim 7, further comprising:

- a part performing equalization processing for each interval of said fluctuation of transmission line characteristics on each corresponding receive signal;
- a part comparing errors of said each corresponding receive signal on which said equalization processing has been performed; and
- a part updating said reference value on the basis of a result of comparing said errors.

9. (original) The equalization processing apparatus as claimed in claim 5, further comprising:

- a plurality of equalization processing parts each corresponding different transmission line characteristics; and
- a part switching said equalization processing parts in accordance with fluctuation of said transmission line characteristics.

10. (original) The equalization processing apparatus as claimed in claim 5, further comprising:

- a part holding equalization processing parameters for different transmission line characteristics; and
- a part setting said equalization processing parameters corresponding to specific transmission line characteristics in accordance with said fluctuation of said transmission line characteristics.

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